

Claims

1. A gas burner including:
a distributor means having at least one distribution chamber to distribute an air gas mixture around said distributor,
5 said burner including a plurality of flame ports through which said gas mixture can pass and be ignited;
at least one injector associated with said distributor means, said at least one injector being positioned to inject gas into said at least one distribution chamber via a venturi formed of a vertically directed passage and transition port and at least one venturi
10 extension extending away from said transition port.
2. A burner as claimed in claim 1 wherein there are two, three or four generally horizontal venturi extensions, which extend in separate directions away from said transition port.
3. A burner as claimed in claim 1 or claim 2 wherein said distributor means
15 has a generally cylindrical outer surface.
4. A burner as claimed in any one of claims 1 to 3 wherein said distributor means has at least two, or preferably three, equi-spaced inwardly extending arms.
5. A burner as claimed in any one of claims 1 to 4 wherein said distributor means includes at least one radially outwardly extending arm.
- 20 6. A burner as claimed in any one of claims 1 to 5 wherein said flame ports direct streams of air gas mixture towards the centre of said distributor means.
7. A burner as claimed in claims 1 to 6 wherein said distributor means has an aperture having a clover leaf configuration.
8. A burner as claimed in claims 1 to 7 wherein said distributor means is
25 segmented whereby each segment has its own distribution chamber and injector.
9. A burner as claimed in claim 8 wherein said distributor means is segmented by means of segment walls between respective segments.
10. A burner as claimed in claims 1 to 8 wherein said distributor means is segmented by means of gas flow from said injectors.

11. A burner as claimed in claim 9 wherein said segments form one of the following: a cross shape with an arcuate or circumferential cross bar; a T shape with a convex arcuate or circumferential cross bar; a T shape with a concave arcuate or circumferential cross bar.

5 12. A burner as claimed in any one of the preceding claims wherein there are two venturi extensions which form an arcuate or circumferential shape.

13. A burner as claimed in any one of the preceding claims wherein there are three venturi extensions which form a T shape with an arcuate or circumferential cross bar.

10 14. A burner as claimed in any one of the preceding claims wherein there are four venturi extensions which form a cross shape with an arcuate or circumferential cross bar.

15. A burner as claimed in any one of the preceding claims wherein said at least one venturi extension is formed as part of said distributor means.

15 16. A burner as claimed in any one of claims 1 to 14, wherein said at least one venturi extension is formed in a cap which is positioned on top of said distributor means.

17. A burner as claimed in any one of the preceding claims wherein said burner includes a cap which is positioned on top of said distributor means.

18. A burner as claimed in any one of the preceding claims wherein said flame ports are formed in one or more walls of said distributor means.

20 19. A burner as claimed in any one of the preceding claims wherein said flame ports are formed in a cap which is positioned on top of said distributor means.

25 20. A burner as claimed in any one of the preceding claims wherein said at least one venturi extension has one or more occluding structures associated therewith for directing and or baffling said air gas mixture in its flow from said transition port to said flame ports.

21. A burner as claimed in claim 20, wherein said occluding structures comprise a wall or ridge like formation extending away from said at least one venturi extension.

30 22. A burner as claimed in any one of the preceding claims wherein said distributor means has at least one air entry port per injector.

23. A burner as claimed in claim 22 wherein there is a plurality of air entry ports per injector.

24. A burner as claimed in claim 23, wherein said plurality of air entry ports are formed in a side wall of said distributor means

5 25. A burner as claimed in claim 24, wherein said air entry ports have a larger cross sectional area at intermediate regions by comparison to side regions of said air entry ports.

26. A burner as claimed in any one of claims 22 to 25, wherein said at least one air entry port is positioned in said wall of said distributor means so as to be located
10 adjacent to said injector.

27. A burner as claimed in claim 26, wherein each said injector is shielded by a portion of a wall of said distributor means to prevent air passing in through said air entry port from disturbing the operation of said injector.

28. A burner as claimed in any one of claims 22 to 27 when appended to claims
15 4 or 5, wherein said air entry ports are located between respective arms of said distributor means, and respective injectors are located so that they are aligned with the direction of radial extension of said arm.

29. A burner as claimed in any one of the preceding claims when appended to claims 4 or 5, wherein said burner includes a trivet which is aligned with said arms, so as
20 to overlie said arms.

30. A burner as claimed in any one of the preceding claims when appended to claims 4 or 5, wherein said arms have a flame port arrangement whereby the axis of said flame ports on a respective arm is generally at an acute angle to the radial direction of extension of a respective arm.

25 31. A burner as claimed in any one of the preceding claims when appended to claims 4 or 5, wherein said arms extend away from said distributor means at an angle of inclination or declination away from an imaginary horizontal plane.

32. A burner as claimed in any one of the preceding claims wherein said distributor means is mounted on a manifold including a gas inlet which communicates with
30 a cavity in said manifold, said injectors communicating with said cavity.

33. A burner as claimed in claim 32 wherein said cavity is convex shaped whereby the height of said cavity at the outer periphery is of a height greater than at the centre of said cavity.

5 34. A burner as claimed in claim 32 or 33, wherein said manifold has its top surface concave in shape, so as to collect towards the centre of said base spillage which occurs during cooking.

10 35. A burner as claimed in any one of the preceding claims wherein said distributor means has an internal and an external perimeter, with inwardly directed ports in said internal perimeter and outwardly directed ports in its external perimeter.

36. A burner as claimed in any one of the preceding claims, wherein said at least one venturi extension is oriented so as to be generally horizontal.

15 37. A manifold for a gas burner, said manifold having an upper wall and a lower wall held in spaced apart relationship by a peripheral wall to define a cavity therebetween, said manifold including means to mount at least one injector so as to deliver an air gas supply to a distribution means and an inlet port to allow connection to a supply of gas, which can pressurise said cavity, said upper and said lower wall being formed from relatively thin sections.

20 38. A manifold for a gas burner as claimed in claim 37, wherein said upper wall has a convex surface protruding into said cavity.

39. A base for a gas burner as claimed in any one of claims 37 or 38, wherein said manifold includes one or more ports adapted to receive said at least one injector nozzle.

25 40. A manifold for a gas burner as claimed in claim 37, wherein said upper wall has a generally concave surface on the outer upper side thereof.

41. A manifold for a gas burner as claimed in claim 40 wherein said upper surface of said manifold also functions as a cup to receive spills when cooking.

30 42. A gas burner comprising one distributor means having at least two discrete distribution chambers therein, each chamber having communication with flame ports and including a venturi to supply an air gas mixture thereto; said burner having only one manifold to conduct gas to respective injectors for each venturi from a single gas supply

connection to said manifold, each of said chambers having a radially extending portion, which extends inwardly towards the centre of said burner, whereby between the ends of respective radially extending portions there is provided an unobstructed space.

5 43. A gas burner as claimed in claim 42, wherein each radially extending portion includes at least two sides which are generally parallel.

44. A gas burner as claimed in claim 42 or 43, wherein each chamber also includes two oppositely extending circumferential or arcuate portions.

45. A gas burner as claimed in any one of claims 42 to 44, wherein said chamber also includes a radially outwardly extending portion.

10 46. A gas burner as claimed in anyone of the preceding claims, wherein said burner includes a cap.

47. A gas burner as claimed in any one of the preceding claims wherein distributor means or said cap includes a multiplicity of said flame ports.

15 48. A gas burner as claimed in any one of the preceding claims, wherein said flame ports are formed by a combination of formations located on said distributor means and said cap.

49. A gas burner as claimed in any one of the preceding claims wherein said chamber includes at least one venturi extension which defines a peripheral channel to deliver air gas mixture to flame ports

20 50. A gas burner as claimed in any one of the preceding claims wherein said cap includes at least one venturi extension which extends into said chamber to define a peripheral channel to deliver air gas mixture to flame ports.

25 51. A gas burner as claimed in any one of claims 42 to 50, wherein each said venturi includes a vertical passage which opens into at least one generally horizontal venturi extension which extends away from said vertical passage in the direction of each respective extending portion of said chamber.

52. A gas burner as claimed in claim 51, wherein said at least one generally horizontal venturi extension is formed in said distributor means.

30 53. A gas burner as claimed in claim 51, wherein said at least one generally horizontal venturi extension is formed in an underside of a cap.

54. A gas burner including a distributor having flame ports in a wall portion of said distributor and or in a cap which will cooperate with said distributor, said distributor also including at least two venturis with each venturi having a respective injector associated therewith located internally of and near to a wall portion of said distributor, said distributor including at least two generally elongated air inlet ports which are located in said wall, said ports having a longitudinal axis which extends circumferentially around said distributor, said ports including at their extremities a reduced cross sectional area when compared to the central portions of said port.

55. A gas burner as claimed in claim 54 , wherein a respective injector is located between opposing ends of said air inlet ports near to a wall portion of said distributor to prevent radially inwardly flowing air from interacting with said injector.

56. A burner as claimed in claim 54 or 55, wherein said injectors and said air inlet ports are arranged with respect to said distributor so that a main stream of radially inwardly flowing air passes through said air inlet port as secondary air for said flame ports.

57. A burner as claimed in any one of claims 54 to 56, wherein said injectors and said air inlet ports are arranged with respect to said distributor so that air passing through said air inlet ports which will be used as primary air by said injectors approaches said injectors in a generally circumferential direction from said air inlet ports.

58. A burner as claimed in any one of claims 54 to 57 wherein said air inlet ports provide an opening which increases in height to a maximum and then decreases, in circumferential direction around said distributor.

59. A burner as claimed in any one of claims 54 to 58, wherein said air inlet ports are one of the following: eye shaped; diamond shaped; half eye shaped, triangular; a circular segment.

60. A gas burner including a distributor means having at least one chamber to distribute an air gas mixture around said distributor means, said burner including a plurality of flame ports through which said gas mixture can pass and be ignited; at least one injector associated with said distributor means, said at least one injector being positioned to inject gas into said at least one chamber via a respective vertically directed converging passage terminating with an transition port which has communication with said chamber, a venturi being formed in part by said converging passage and said transition port with a final part of said venturi being formed by at least one venturi extension which acts

upon a generally horizontal flow of said air gas mixture flowing from said transition port, said transition port having at or near its rim two or more occluding structures associated therewith for directing and or baffling said air gas mixture in its flow from said transition port to said flame ports.

5 61. A burner as claimed in claim 60, wherein said occluding structures comprise a wall or ridge like formation extending away from said protrusion and or said protrusion extensions.

 62. A burner as claimed in claim 60 or 61, wherein said occluding structures have a castellated appearance.

10 63. A burner as claimed in any one of claims 60 to 62, wherein said occluding structures are formed on said distributor means or in a cap associated with said distributor means or by a combination of both.

 64. A burner as claimed in any one of claims 60 to 63, wherein said flame ports are formed on said distributor means or in a cap associated with said distributor means or
15 by a combination of both.

 65. A burner as claimed in any one of claims 60 to 64, wherein extending away from said transition port there are at least two venturi extensions.

 66. A burner as claimed in claim 65 wherein said occlusion structures are located near to the edges of said venturi extensions.

20 67. A burner as claimed in claim 65 or 66, wherein said venturi extensions are formed either on said distributor means or in a cap associated with said distributor means or by a combination of both.

 68. A burner as claimed in any one of claims 60 to 68, wherein said occlusion structures taper toward their extremities.

25 69. A burner as claimed in any one of claims 8 or 9, or 42 to 53, wherein said distributor means is an assembly of separate or discrete segments which are assembled or otherwise joined together.

 70. A burner as claimed in claim 69, wherein said separate or discrete segments include interlocking formations thereon so that adjacent burner segments can be assembled
30 together.

71. A burner as claimed in claim 69 or 70, wherein said separate or discrete segments are held together as an assembly by means of a interaction with a burner cap.

72. A burner as claimed in any one of claims 69 to 71, wherein a circumferential fixing means assists in holding or holds said separate or discrete segments
5 together as an assembly to form a distributor.